

NOVEMBER/DECEMBER 2025

**23UMB41 — IMMUNOLOGY AND IMMUNO
TECHNOLOGY**

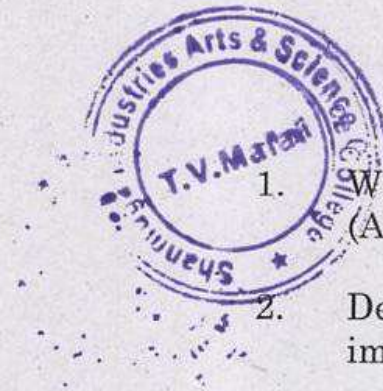
Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the role of antigen-presenting cells (APCs) in immunity?
2. Define apoptosis and its importance in the immune system.
3. What is the function of an adjuvant in vaccines?
4. Define cross-reactivity in antigen-antibody interactions.
5. Name two fluorescent dyes used in immunofluorescence.
6. Define antibody standardization.
7. Name two immunosuppressive drugs used in transplantation.



8. What is the role of CD8+ T cells in tumor immunity?
9. Define delayed-type hypersensitivity (DTH).
10. What is the function of T regulatory cells (Tregs) in autoimmunity?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Outline the role of secondary lymphoid organs in immune response.

Or

- (b) Discuss the steps of humoral immunity with suitable diagrams.

12. (a) Explain antiviral vaccines and their mechanism of action.

Or

- (b) Distinguish between active and passive immunization with advantages and disadvantages.

13. (a) List out the steps involved in ELISA.

Or

- (b) Outline the methods for bacterial antigen preparation.

14. (a) Explain the role of natural killer (NK) cells in tumor immunity.

Or

- (b) Summarize the HLA system and its significance in transplantation.

15. (a) Discuss the diagnosis and treatment options for AIDS.

Or

- (b) Explain the various immunosuppressive treatments for autoimmune diseases.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the processing, presentation, and regulation of T-cells in immune response.
17. Demonstrate the structure, functions, and types of antibodies.
18. Outline the steps in raising monoclonal antibodies using hybridoma technology.
19. Explain the different types of graft rejection and the mechanisms involved.
20. Elaborate note on the different types of hypersensitivity reactions with suitable examples.